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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re PATENT APPLICATION of:

CHRISTIANSEN et al.

Group Art Unit: 3735

Appln. No.: 09/097,383

Examiner: David M. Shay

Filed: June 16, 1998

Title: LIGHT PULSE GENERATING APPARATUS AND COSMETIC AND
THERAPEUTIC PHOTOTREATMENT

REPLY BRIEF

PILLSBURY WINTHROP SHAW PITTMAN LLP
P.O. Box 10500
McLean, Virginia 22102
Telephone: (703) 770-7900
Attorneys for Appellants

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copy to the Examiner's Answer dated April 20, 2006, consideration of the following remarks is respectfully requested.

With respect to the Examiner's arguments that "in the absence of even the broadest outline of the control scheme by which the claimed optical output power is produced, this disclosure is insufficient to describe the means plus function recitation under 112, 6th paragraph as required by MPEP 2181 (II)," it is respectfully re-submitted that the Examiner has not met his initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.

Page 18, line 31 of the instant application discloses that the capacitor C is charged to a voltage set by the PC. Page 19, line 6, further discloses that the IGBT solid state switch is controlled by the PC. Inspection of the circuit of Figure 1 clearly conveys to one of ordinary skill in the art that when the IGBT switch is conductive, the capacitor voltage is applied to the flashlamp. Figure 1 also clearly illustrates in the line 14 connecting the PC with the IGBT switch that the output of the PC to the IGBT switch is in pulse form.

As further disclosed on page 22, Figure 6 illustrates pulse trains according to claim 15. It is respectfully submitted that it would have been clear to one of ordinary skill in the art that the shaping of the pulses of Figure 6 would have been achieved by the programming of the PC which controls the current flow from the capacitor C to the lamp by the switching of the IGBT switch, as shown in Figure 1. This is disclosed, for example, as the appropriate signal treatment on page 23, line 31.

It is respectfully submitted that it is clear that the PC is the means recited in claim 15 for adjusting the time weighted average of the light power output, by controlling the current flow via the IGBT switch and therefore directly controlling the light output from the lamp

produced by that current flow. Suitable choices of on-off periods dictated to the IGBT switch by the PC are described, for example, on page 22 for several different pulse shapes.

The standard of anticipation is clearly set forth in MPEP § 2131, in its discussion of Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The identical invention must be shown in as complete detail as is contained in the claim.

The arguments of the Examiner notwithstanding, there is no disclosure by Eckhouse of an invention identical to that contained in claim 1, or claims 2, 3, 8, 10-15, 18 and 22-25. Applicants' arguments that none of the various embodiments of Eckhouse show an identical invention in as much detail as recited in the claims is not a "focus on minutia" as alleged by the Examiner, rather they are clear reasons why the rejection fails to present a *prima facie* case of anticipation. As discussed on page 8 of the Supplemental Appeal Brief filed January 19, 2006, the presentation of a *prima facie* case of anticipation cannot be established by a mixing and matching of various embodiments of a prior art reference, whether the reference suggests such mixing and matching or not. The Examiner's inability to construe a single embodiment of Eckhouse as disclosing the invention of claim 1 in as much detail as is contained in the claim is, in and of itself, a clear demonstration that Eckhouse does not anticipate claim 1.

Eckhouse also fails to render obvious claim 1. Contrary to the Examiner's arguments, there is no suggestion or motivation to modify and/or combine the various embodiments of Eckhouse, nor would such modifications and/or combinations include all the limitations of claim 1, nor would such modifications

and/or combinations provide a reasonable expectation of success. Eckhouse discloses in Figures 1 and 2 a linear flashlamp 14 in an open housing, optical and neutral density filters 18 (see column 5, line 45), and optical filters (see column 10, line 51). Eckhouse discloses in Figures 4-8 a circular flashlamp 42 in a closed housing, water cooling the flashlamp, and an optical fiber. Eckhouse discloses in Figures 9 and 10 a linear flashlamp and an optical fiber.

The Examiner refers to the embodiments of "Figures 4 and 8-10." It is respectfully submitted, however, that these embodiments are unrelated. For example, Figures 9 and 10 refer to an embodiment which is not described as having water present.

Claim 1 recites an apparatus for pulsed light cosmetic or therapeutic photo-treatment of the human or animal body, comprising a housing, a gas filled arc lamp light source within said housing operable to produce a pulsed light output, a power supply connected to said arc lamp light source for operation thereof to produce a light output duration of from 10 to 70 msec, a light output aperture defined by said housing, and a filter system for filtering undesired light output wavelengths from said pulse to produce a filtered light pulse for application to said body, at least part of said filter system being interposed between said light source and said aperture, wherein said filter system consists of (a) a filter for filtering out UV and near UV wavelengths shorter than 510 nm and for passing longer wavelengths and (b) water, said water being located in the apparatus for filtering out undesired skin heating wavelengths of light which would otherwise pass to said output aperture, wherein said filtered light pulse has an energy of at least 250 J/cm²/sec.

Claim 1 is not anticipated by Eckhouse because the embodiments of Figures 1 and 2 do not disclose water as being present, whether to act as an optical filter or for any other

purpose. Claim 1 is not anticipated by Figures 4-8 because there is no disclosure in these Figures of filtering out wavelengths shorter than 510 nm. Claim 1 is not anticipated by Figures 9 and 10 because there is no disclosure or suggestion by these figures of 1) water and 2) an optical filter.

The Examiner refers to column 8, lines 58-63, Eckhouse for its disclosure that the embodiments of Figures 4-8 are similar to the embodiments of Figures 1 and 2. It is again respectfully submitted that such a disclosure, is at best motivation to modify and/or combine the embodiment of Figures 1 and 2 with the embodiment of Figures 4-8, it is not a disclosure of an identical invention as contained in as much detail in recited in claim 1. Therefore, Eckhouse does not anticipate claim 1.

The disclosure of column 8, lines 56-63, also does not render obvious claim 1. This passage merely discloses that just as a flashlamp can be used instead of a laser for skin treatment, as in the embodiment of Figures 1 and 2, so also can a flashlamp be substituted for a laser in an apparatus for use in invasive treatments.

The passage also does not suggest or motivate any modification and/or combination of the embodiments of Figures 1 and 2 and Figures 2-8. The implication is merely that the flashlamp and its electronics can be adapted from the embodiments of Figures 1 and 3. It does not suggest or motivate a combination of the water coolant of Figures 4-8 with the embodiment of Figures 1 and 2, nor the combination of the use of a water coolant with the later described Schott filters of column 10, line 60. In addition, as discussed in the Supplemental Appeal Brief, the embodiment of Figures 1 and 2 includes an iris 20 and is incompatible with either water coolant or a coupler, i.e. even assuming the passage in

question suggested the modification/combination alleged by the Examiner, there would be no reasonable expectation of success and no *prima facie* case of obviousness.

It is further respectfully submitted that the “similarity” suggested by the passage in question is in fact a reference to the driving circuitry of the flashlamp, not a similarity in the aspect of optical filtering. The coupling of the light to the target area in the embodiment of Figures 1 and 2 is clearly different than the coupling of the light to the target area in the embodiments of Figures 4-8. Of these two categories, the filtering of the light output clearly belongs to the category of the coupling of light to the target area, not to the driving circuitry of the flashlamp. The Examiner’s reliance on Eckhouse’s disclosure of a “similarity” between the embodiments of Figures 1 and 2 and the embodiments of Figures 4-8 is thus a false reliance.

The Examiner’s reference to column 10, lines 24-30 and 48-50, of Eckhouse also fail to establish a *prima facie* case of anticipation or obviousness. These passages merely refer to the single fibers or small fiber bundles and the use of the reflector/collection arrangement 44 to deliver the light to the conical end of the fiber 46. There is no explanation of the nature of the disclosed “industrial” or “domestic” applications, and there is no disclosure or suggestion of filtering.

It is respectfully submitted that there is no disclosure or suggestion of filtering in the embodiments of Figures 4-8 as one would not expect the need for such filtering in an invasive treatment, such as a surgical procedure, in which all of the light output can be delivered directly to the target. There is also no disclosed or suggested purpose for filtering when the embodiments of Figures 4-8 are used for an unspecified industrial or domestic purpose.

The Examiner's reference to the alternative, rectangular light guide, in column 10, lines 48-53, appears to be an attempt to establish motivation for the combination of the water filled reflector 44 of Figure 4 and the Schott filters disclosed in column 10, lines 59-64, with the embodiment of Figures 1 and 2. It is respectfully submitted that no such motivation exists. It also appears to be the position of the Examiner that Eckhouse's discussion of the alternative embodiment (rectangular light guide) beginning in column 10, line 48, refers to the embodiments of Figures 4-8. It is respectfully submitted that it does not, and in fact refers to the embodiment of Figures 1 and 2.

Eckhouse clearly discloses in column 10, lines 50-51, that the rectangular light guide is shaped to match a rectangular linear flashlamp. The flashlamp of the embodiments of Figures 4-8 are clearly circular, not linear. Therefore, it is clear that the discussion of this "alternative embodiment" refers to an alternative embodiment of the embodiment of Figures 1 and 2. Accordingly, the further discussion of the use of a Schott filter added to the end of the guide refers to an alternative embodiment of Figures 1 and 2, not of Figures 4-8.

Eckhouse thus does not disclose or suggest the use of both 1) water as a filter and 2) a filter (Schott filter or otherwise) for filtering wavelengths shorter than 510 nm, as recited in claim 1. In other words, Eckhouse's discussion of the Schott filters is in the context of Figure 1, which does not disclose the use of water, and is not in the context of Figures 4-8, which disclose the water filled collector 44. This conclusion is confirmed in column 11, lines 3-5, which discloses that "[t]he use of the filters described here may render the use of the filters described earlier with reference to FIG. 1 redundant." (Underlining emphasis added.)

With respect to the Examiner's concern that Appellants have not pointed to any evidence of record to support the conclusion that it is more difficult to transmit a sufficient amount of light via a fiber than through a light guide, it is respectfully submitted that it is self

evident that that it is more difficult to transmit light through a fiber of a millimeter, or less, in diameter than through a light guide of several square centimeters. Such a conclusion does not require the filing of evidence by Appellants. However, the point being made by Appellants is that one of ordinary skill would not have been motivated to employ water between the light guide and the lamp to avoid losses as the air/light guide interface.

It is respectfully submitted that the Examiner's arguments regarding Appellants discussion of Gustafsson are an over simplification of Appellants' position. It is, in fact, the Examiner who alleges that the cooling system of Gustafsson is what make the lamp much more effective.

The embodiments of Figure 1 and Figure 2 of Gustafsson differ in two respects, one of which is fundamental and one of which is incidental.

The second embodiment (Figure 2) of Gustafsson, unlike the first embodiment (Figure 1), does not transmit the light emitted from the flashlamp to the skin at all. Instead, the second embodiment uses the emitted light to stimulate excitation of a fluorophore as in the cavity of a laser. Light emitted as fluorescence from the fluorophore is what is transmitted to the skin of the patient. Thus, the wide range of wavelengths emitted from the flashlamp is replaced by a narrow band of emission of wavelengths selected by Gustafsson as being particularly suited to the task at hand. See column 2, lines 62-66 and column 3, lines 7-26. This arrangement of the second embodiment is the sole focus of claim 1 of Gustafsson, and its recited light transforming means. That is what makes the second embodiment more effective.

The disclosure of the water coolant is merely an incidental difference, one that doesn't even rate a dependent claim. The water coolant can hardly be interpreted by one of ordinary skill in the art as the feature of Gustafsson that makes the lamp much more effective.

With respect to the Examiner's arguments regarding the requirement for a strong motivation to combine Eckhouse and Gustafsson, as the Examiner's arguments are premised upon the combinability of the embodiments of Figures 1 and 2 and Figures 4-8 of Eckhouse, which as discussed in detail above is neither disclosed nor suggested by Eckhouse, no further arguments are deemed necessary.

The Examiner's allegations that Appellants have provided no citation to Gustafsson for the arguments that the water of Gustafsson is prevented from filtering light from the flashlamp is clearly incorrect. Appellants clearly corrected the Examiner's misstatement of Appellants' position and provided clear reference to the second embodiment (Figure 2) of Gustafsson in the paragraph bridging pages 20-21 of the Supplemental Appeal Brief.

For the reasons discussed, Appellants respectfully request this Honorable Board to reverse the rejections.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP



John P. Darling
Reg. No. 44,482

June 20, 2006
JPD/bhs
P.O. Box 10500
McLean, Virginia 22102
Tel: (703) 770-7900
Fax: (703) 770-7901